

A Work Project, presented as part of the requirements for the Award of a Masters Degree in  
Management from the NOVA – School of Business and Economics.

## SHARP'S ALLIANCES IN CHINA: A NEGOTIATION CASE

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Number 1894

A Project carried out on the Management course, under the supervision of:

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June 3<sup>rd</sup>, 2015

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### **Abstract**

*This report presents a case study to be used in courses of negotiation in masters and executive programs. The case studies the topics of the coalitions' formation and stability from a negotiation analysis perspective, linking it to value creation. Moreover, it illustrates the problem of western companies investing in the Chinese market. The methodology utilized was the construction of a negotiation case, inspired by a real negotiation in the Consumer Electronics industry. Its purpose is to illustrate the value creation problems in coalitions. It is concluded that by maximizing value creation, negotiating parties are more likely to obtain stable coalitions.*

### **Key words:**

Negotiation, Coalitions, Value Creation, Consumer Electronics

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## **1 Introduction**

This Work Project presents a case study to be used in negotiation courses in master's programs and executive education workshops. The case study is inspired by the real negotiation between Sharp Corporation, Irico and CEC-Panda. Sharp's change to its operating model led the firm to desire the ability to manufacture LCD and TV core components in China. CEC-Panda was the Chinese firm with which Sharp negotiated a strategic alliance.

This report aims to examine the theme of the coalition's formation and its stability. The theme of the negotiation selected is particularly interesting since it illustrates the problems that western companies face while entering China: a tradeoff between protecting their core competencies and having access to the Chinese competitive market. China's reputation for problems related to intellectual property is the core of the problem.

Building a negotiation case was the methodology selected to study the coalition's topic, since its discussion becomes more relevant utilizing one concrete negotiation situation. The formation and stability of coalitions are influenced by several factors, which include the negotiation process, its outcome and each side's setting in the negotiation. The report aims to study the coalition theme linking it to the topic of creating value in a negotiation. It concludes that by maximizing the value creation process, parties aiming to form a coalition are more likely to form a stable one.

This report is organized as follows. We begin by introducing the real story which inspired the negotiation. Then, we present the negotiation case that was built, which is divided into two sections: first, the general instructions for all negotiating parties; second, each side's confidential instructions. A literature review on the themes of coalitions and

value creation is then introduced, followed by its application to the negotiation case. This section aims to comprehend how parties should negotiate the negotiation case. Valuable lessons can often be learnt from the negotiations' real output and that is why it is relevant to mention it in this report. Finally, the report's conclusion is developed.

### **Acknowledgment**

Very special thanks are due to Professor Luís Almeida Costa, my advisor, for his extremely helpful guidance and support during this Work Project. Moreover, I would like to thank my Mother and my Father, for allowing me to study in this Masters Program and for all their support. My Sister and my Brother were an important help during these last months.

## 2 The real story behind the negotiation case<sup>1</sup>

In this section, we present the real negotiating situation between Sharp, Irico and CEC-Panda, upon which the negotiation case presented in this report is based.

Back in the spring of 2009, Sharp Corporation (hereafter “Sharp”) presented its first loss since 1956. The Japanese electronics firm was facing difficult times. Due to worldwide recession, Sharp’s competitors were also facing the same hard times. But the truth is that there were other reasons for Sharp’s situation.

### Sharp Corporation

Sharp was established in 1912 by Tokuji Hayakawa. The Japanese electronics firm has its headquarters in Osaka, Japan. The firm’s business activity consists of the manufacturing and selling of consumer products (such as liquid crystal display (LCD) TVs), information products (such as mobile phones) and electronic components (such as LCDs). Technology innovation was always part of Sharp’s DNA. This allowed the firm to develop expertise in certain electronic devices, such as LCDs. In 1973, Sharp had the first worldwide successful implementation of an LCD panel, at that time in a calculator. Since then, Sharp has invested heavily in order to maintain a leading position in LCD technology. Its strategy has been to develop larger and higher quality LCD displays. These displays are

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<sup>1</sup> The real story, the negotiation case and what really happened in the negotiation descriptions are largely based on the case studies Lehmberg Derek. 2011. “Sharp Corporation: Beyond Japan.” Richard Ivey School of Business Foundation. Discussion Paper 9B11M007; Noda Tomo. 1993. “Sharp Corporation: Technology Strategy.” Harvard Business School. Discussion Paper 9-793-064; on the annual reports of Sharp Corporation (Years 2007 and 2009), and on the following internet documents: Sharp’s official website “*Sharp 100<sup>th</sup> Anniversary: A Century of Sincerity and Creativity*,” “Sharp and Sony Enter into Definitive Agreement regarding Joint Venture to Produce and Sell Large-Sized LCD Panels and Modules;” “Sharp Signs Agreement for LCD Panel Production Project in China;” “Notice of Business Alliance Relating to LCDs with China Electronics Corporation;” Sony’s official website “Sharp and Sony sign Memorandum of Intent to create Joint Venture for Large Sized LCD Panels/ Modules;” Irico’s official website “About Irico,” CEC-Panda’s official website “Company Profile,” CEC’s official press “CEC, Nanjing Municipal Government, and Sharp Corporation officially signed the cooperation agreement on high-generation LCD panels in Beijing,” Bloomberg Business “China 2010 Foreign Investment Rises to Record,” China Economics News Service “China Becomes World’s Largest LCD TV Market,” Financial Times “Samsung buys stake in Sharp,” Market Intelligence & Consulting Institute “Sharp’s Cooperation with CEC and its implications for the Worldwide LCD Panel Industry,” Semiconductor Portal Inc. “Update: Sharp, Sony to continue negotiation on 10G LCD joint operation,” The Next Web “Qualcomm finally completes \$120m investment in Sharp, now its third-largest investor with 3.5% stake,” The Wall Street Journal “Foxconn Buys Into Sharp,” WantChinaTimes “Sharp and CEC Panda Could Build tenth-generation LCD Plant in China.”

used in several end products, such as mobile phones and TVs. The continuing efforts in LCD R&D led Sharp to be recognized as a leading manufacturer worldwide for this type of components.

### **Sharp's operating model**

Sharp built its success based on the strategy of manufacturing its core electronic components in Japan. Its overseas production units were typically focused on assembling the final products to be sold in local markets, using components that were either shipped from Japan or acquired from competitors. LCDs and TVs were an example of this strategy, as its Japanese plants operated with a black-box approach. This meant that outsiders were not allowed inside the company's plants. This strategy was justified by Sharp's desire to avoid imitation of its core components and cutting-edge technology, as well as benefiting from possible economies of scale and specialization gains from the production of the different components. Moreover, this centralization made it easier to properly coordinate the R&D and production activities.

This model was successful while the majority of Sharp's sales were concentrated in the Japanese market. Beginning in 2006, overseas sales exceeded those of the national market. Moreover, with the financial crisis worldwide, the Japanese market suffered a decrease in demand, as opposed to some emerging markets which expanded. One of the most significant emerging markets example was the Chinese. Under this new scenario, Sharp's operating model revealed several problems. It became more difficult to remain competitive in overseas markets, by producing in Japan and exporting core components. The expensive labour force in Japan, together with high transportation, infrastructure and utility costs, currency risks and high corporate taxes were the main reasons. LCD prices

were often decreasing, mostly due to improvements in the production process and the commodity status of the product. Thus, it could be the case that during transportation by sea, LCD panels would lose value. Moreover, components acquired in overseas market, for example in China, were often expensive. For all these reasons, Sharp had to consider the possibility of implementing a new operating model that consisted of being able to manufacture core components overseas.

Regardless of Sharp's decision to adapt the current operating model, the ability to manufacture locally in China was a necessary condition. In order to become competitive in such a market, having access to cheap components would be required. Due to Chinese government and local units' requirements, this move typically implied a partnership with local firms. Such an alliance with local firms to manufacture in China included problems of imitation risk for Sharp's core components. Still, this risk could be mitigated by keeping the core manufacturing components in Japan and transferring to China only the manufacturing of technology that was not considered cutting-edge.

In line with the previous considerations, Sharp introduced its new operating model. Sharp would be able to manufacture in other markets, maintaining only its cutting-edge technology production in Japan. The strategy now was local production for local consumption. Taking advantage of its worldwide reputation, Sharp would be willing to transfer equipment and knowledge of obsolete generation plants to overseas locations. Thus, the technology equipment already considered obsolete could be sold abroad, as there was a market for this equipment. The more recent technology, but not cutting-edge, could be moved into overseas plants. Those would be operated through joint ventures with local leading firms, where Sharp would deliberately take a minority interest. Sharp would incur



initial investments according to its stake in the joint venture, and be paid in fees for the engineering work and operating fees, taking advantage of its expertise. By following such a strategy, Sharp would continue to protect its most important technology property and at the same time cut costs.

### **Sharp's latest LCD technology advances**

In 2007, Sharp began the construction of the first ever tenth-generation factory worldwide, in Sakai (Japan). This move was boosted by the significant profits the company achieved that year. By investing in more recent technology, Sharp aimed to be able to supply larger panels to final consumers, targeting a price increase for those products. The company was aware, however, that such a strategy was not sustainable in the long-run, as at some point Sharp would reach the LCD's limit size that consumers would be willing to buy. At this time, Sharp accounted for nearly 50% of the Japanese TV market.

In July 2009, Sharp established a joint venture with Sony to operate the Sakai plant. Sony paid ¥10 billion (approximately €74 million) to Sharp in order to guarantee a stake of 7.04% in the Sakai plant.<sup>2</sup> By settling the joint venture, Sharp was able to reduce its investment and the operation's risk, by guaranteeing the plant output's allocation. Sony on the other hand, guaranteed access to cutting-edge technology LCD panels. Such a fact also reveals a change in Sharp's strategy, as it shifted the focus from operating its factories alone.

### **Sharp's operation loss**

As stated earlier, Sharp faced financial difficulties in the spring of 2009. In 2008, its net sales declined by 16.7% compared to the previous year, and the firm reported an operation

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<sup>2</sup> ¥ is the symbol that represents the Japanese Yen and its currency code is JPY. The currency rate utilized was 0,0074€ (14<sup>th</sup> May 2015).

loss of ¥55.4 billion (approximately €410 million). In Sharp's Annual Report 2009, the firm highlighted the main reasons for the loss: "A tougher price competition for digital products caused by the global recession, sharp yen appreciation, and deteriorating income associated with adjustment of retailers' inventories of LCD TVs and LCD panels."

### **Sharp's manufacturing strategy in China**

The global recession mentioned by Sharp's Annual Report led to the forecast of a fall in the demand for LCD and TV panels. The impact would be mostly on developed countries. Contrarily, emerging countries had better forecasts, particularly China, where Sharp took some of its initial changes. Sharp already owned an assembly plant in Nanjing, China. The panels assembled in this plant had to be imported from Sharp's Kameyama Plant Number 2, in Japan. By importing the panels, Sharp incurred 5% duty.

Sharp's competitors were also aware of the importance of this market. Consequently, leading companies wanted to be able to manufacture LCD TV panels in China. To pursue its plan of being able to manufacture in China, Sharp wanted to negotiate with prominent local companies to establish strategic alliances. Chinese firms saw the foreign firms' interest in China as the opportunity to be able to manufacture LCD TV panels. The expertise, know-how and technology that foreign firms possessed were considered vital by local firms. Back then, only two Chinese companies were able to manufacture LCD TV panels.

Sharp was in conversations with two Chinese companies: Irico and Nanjing China Electronics Panda Group Corporation (hereafter "CEC-Panda").<sup>3</sup> The three companies entered into negotiations regarding the Chinese market. Sharp's new strategy of

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<sup>3</sup> These firms' description is further developed in the negotiation case that follows this discussion.

manufacturing LCDs for local market consumption locally was able to attract the interest of both Irico and CEC-Panda.

### **3 Negotiation case**

In the following pages, we present the negotiation case based on the real negotiation between Sharp, Irico and CEC-Panda. First, we present the general instructions, which will be distributed to all players, irrespective of their role in the negotiation. The general instructions provide some background information about the industry and its recent developments, the parties involved and the setting of the negotiation.

We then present the confidential instructions for the different parties. The confidential instructions of each player provide specific and more detailed information about the situation, concerns and objectives of that party in the negotiation. These instructions will be distributed only to students playing that role in the negotiation.

In order to make the negotiation more interesting, in preparing the general and confidential instructions, we introduced some changes to the real story and simplified the situation. In spite of these adjustments, the case study is consistent with the essence and the key characteristics of the real negotiating situation behind it.

### **Sharp, Irico and CEC-Panda - General instructions**

This is the negotiation between Sharp, Irico and CEC-Panda, related to the LCD and TV industries' operations in China. Despite still being highly dependent on importation, the Chinese market is becoming more and more attractive for both local and foreign firms. The global recession brought important changes to the LCD and TV industries. Its players seek to conquer or sustain leading positions in an increasingly competitive market. Today is an important day for the industry, as the CEOs of two Chinese (Irico and CEC-Panda) companies and one Japanese (Sharp) company are about to meet.

#### **LCD and TV Industries**

The LCD and TV industries have been dominated by Asian players over the last decades, namely Japanese, Taiwanese and South Korean ones. These players' earlier entrance in the market gave them significant advantages, which were further strengthened by R&D efforts over the years. Lately, Chinese firms are pursuing efforts to become respectful players in the market.

LCD TV production plants are categorized by the generation of glass substrate they use. Leading companies pursue all efforts in R&D to be able to move into a new generation of equipment. Each technology advance leads to the growing of the size of the glass utilized. In the R&D process and the consequent building of new production facilities, companies incur large initial investments. However, their production is usually more cost-effective. As new generations appear in the market, the older ones gradually become obsolete and the imitation risks are higher.

As a consequence of the worldwide financial crisis, demand for LCD and TV panels was forecast to fall in developed countries. Contrarily, emerging countries had better forecasts, particularly China. To protect local producers, the Chinese government established a 5% duty on imported LCD TV panels. Consequently, worldwide leading companies wanted to be able to manufacture LCD TV panels in China. Clearly, Sharp was among them. On the other side, Chinese firms saw the foreign firms' interest in China as the opportunity to be able to manufacture LCD TV panels. Irico and CEC-Panda were examples of such interest. Back then, only two Chinese companies were able to produce LCD TV panels: BOE and CSOT.

#### **The players in the negotiation**

Sharp is a Japanese electronics firm with headquarters in Osaka, Japan. The firm's business activity consists of the manufacturing and selling of consumer products (such as LCD TVs), information products (such as mobile phones) and electronic components (such as LCDs). Technology innovation was always part of Sharp's DNA. The continuing efforts in LCD R&D led Sharp to become associated worldwide with LCDs.

1-2

Sharp built its success based on the strategy of manufacturing its core electronic components in Japan. Being present worldwide, Sharp had overseas plants that were typically focused on assembling the final products to be sold in local markets, using components that were either shipped from Japan or acquired from competitors.

Sharp already had an LCD assembly plant in Nanjing, China. In 2007, Sharp started the construction of the first ever tenth-generation factory worldwide, in Sakai (Japan). In the spring of the current year, Sharp presented its first loss since 1956. Due to worldwide recession, Sharp's competitors were also facing hard times.

Irico is a state owned enterprise with headquarters in Beijing, China. Its main business focuses on the R&D and manufacture of the display device and its components, optoelectronic complete set and related components. Irico is also China's largest producer of cathode ray tubes (CRT). CRT is a panel display also utilized for LCD TVs. However, the industry's trend is for LCD TVs to replace traditional CRT models.

CEC-Panda is a group of electronics and telecommunication companies, located in Nanjing-city at Jiangsu-Province, China. Its business focuses on multiple industries, including communications, digital audio/ video, smart electronic systems, electronics equipment and electronics manufacturing. CEC-Panda's capital is 70% dominated by China Electronics Corporation (hereafter "CEC"). CEC is the parent company of CEC-Panda. The remaining 30% are equally split among Jiangsu-Province and Nanjing-city. CEC is one of the largest groups of electronics and telecommunication companies in China under direct command of the Government.

### **The negotiation**

Sharp, Irico and CEC-Panda entered into negotiations regarding the Chinese market. Sharp established its priorities: first, Sharp aimed to establish a joint venture to produce LCD panels utilizing eight-generation glass substrates. Such an upgrade in technology required Chinese government approval. Sharp Kameyama (Japan) Number 2 Plant was the first plant worldwide to employ eight-generation glass substrates.

Secondly, Sharp wanted to construct an LCD R&D center in Nanjing, to research and develop from LCD panels to LCD TVs.

Moreover, Sharp decided to sell the LCD sixth-generation production equipment at Sharp's Kameyama Number One plant. The firm that was able to acquire such equipment would be able to manufacture up to 80.000 LCD panels and 80.000 modules per month using smaller sixth-generation substrates. In the case of acquisition of the equipment by a Chinese firm, assistance of an expert firm during the process would be required, as Chinese firms lacked the expertise required.

2-2

### **Sharp – Confidential Instructions**

You play the role of Kozoi Takashey, Sharp's CEO, in the negotiation with Irico and CEC-Panda concerning Sharp's ability to manufacture core components in China. Your role includes negotiating Sharp's overseas implementations. In order to do so in this negotiation, you are reviewing the key issues with Sharp's Overseas General Manager.

**Sharp's current situation** – Sharp presented an operation loss in the fiscal year of 2008. This was mostly due to global recession. However, Sharp's overseas sales have been increasing in terms of importance. Lately, these sales surpassed those of the Japanese. Sharp's operation strategy of manufacturing LCD core components in Japan revealed some problems to adapt to this new reality. The cost associated with manufacturing in Japan and exporting to overseas markets was too high, mostly due to: Japanese high corporate taxes, infrastructure, transportation and utility costs. Moreover, LCD prices were often decreasing and thus, during the transportation to overseas markets, LCD panels could lose value. Finally, LCD panels were produced in Japan where the currency utilized is the Japanese yen. When the yen strengthened, overseas sales became less significant in yen terms. The increasing costs and the financial difficulties of Sharp, led the company to revise its operating strategy. Regarding the LCD operation, the company aimed to be able to manufacture LCD panels overseas, keeping only its cutting-edge technology in Japan.

**The Chinese market for Sharp** – Sales in the country already represent around 14% of Sharp's overall sales. Together with the government duties on panels' imports and the country's increasing demand expectation for LCDs, these factors mean China is of major importance to Sharp.

**Sharp's strategy for China** – Sharp aims to be able to manufacture eight-generation LCD TV panels in China. According to the firm's new strategy, it seeks local leading firms to establish a joint venture. By doing this, Sharp is able to reduce its initial investment and guarantee the plant's output allocation. On the other hand, such an alliance with Chinese firms includes problems of imitation risk for Sharp's core components, due to the country's reputation for problems related to intellectual property. In its future joint ventures, Sharp wishes to take a minority interest (maximum 12%), avoiding incurring depreciation expenses. The equity in the joint venture will correspond to each firm's initial investment and the factory's output allocation. Sharp's engineering team estimated the overall cost of establishing an eight-generation plant in Nanjing, to be around €2.6 billion. Such a plant would have the production capacity of 60.000 LCD panels and modules per month. Sharp expects to target a €850 price per LCD panel.

Moreover, Sharp wants to build an LCD R&D center in China. The firm seeks to strengthen the LCD panel production and LCD TV business in China. This is considered an essential tool to understand the Chinese market and further develop the LCD

### **Sharp – Confidential Instructions**

technology in the country. Sharp will build and operate the center alone, not accepting any participation of other companies, in order to maintain secrecy regarding the advances it expects to reach.

**The Sakai project and its implications** – By beginning the construction of the tenth-generation Sakai plant, Sharp decided that it should close the sixth-generation Kameyama Number 1 plant, and that equipment should be sold. Sharp suspects that there are several Chinese firms interested in acquiring it. In any case, for the starting phase, those firms would always require assistance from a firm with expertise. Sharp estimates its costs with such assistance to be around €485 million. In the first attempt to approach the market, Sharp received an offer of €500 million for this equipment. Sharp could have an advantage of selling this material to a Chinese firm. That firm would most likely build a sixth-generation plant and its LCD panels could supply Sharp's assembly plant in Nanjing. Currently, the panels that were assembled in this plant had to be imported from Sharp's Kameyama Plant Number 2, in Japan. These panels had to be charged 5% duty. Thus, each LCD panel imported currently has a total cost of €400.

2-2

### **Irico – Confidential Instructions**

You play the role of Yingzho Wa, Irico's CEO, in the negotiation with Sharp and CEC-Panda. This negotiation might enable Irico to be able to manufacture LCD TV panels. Your role includes negotiating Irico's possible partnerships in China. In order to do so in this negotiation, you are reviewing the key issues with Irico's National Market Manager.

**Irico's current situation** - Irico faces this negotiation with the objective of becoming the third Chinese company able to produce LCD TV panels in China. Knowing the trend of foreign firms investing in China, Irico is aware that the sooner it is able to do this, the better.

**Irico's interests in the negotiation** - Irico is interested in purchasing Sharp's sixth-generation production equipment of the Kameyama Number One plant. Irico plans to utilize this material in a plant that would be built in Nanjing. Irico's engineering team made a first approach to the market of this technology and estimated its market value at around €625M. They also had some first-explorative conversations with a Taiwanese firm, which demonstrated the will to sell sixth-generation equipment for a value around €600M. You are aware the Taiwanese government does not allow local companies to move manufacturing facilities into China. That is why this equipment was moved to Europe and its acquisition would still require extra transportation costs. The engineering team was very clear about the request that any acquisition of such technology would be coupled with assistance from a firm with expertise. Irico team has no experience with sixth-generation technology, and to successfully install the plant and run it during the initial phase would require know-how. The costs associated with the construction of the plant are estimated to be €1 billion. The plant that Irico plans to build could produce 80.000 LCD panels and 80.000 modules per month. Irico expects to target a €350 price per LCD panel and €175 per module. Irico is estimating the sixth-generation plant to have a life cycle of 8 years.

Moreover, Irico would be interested in helping Sharp in building and operating the LCD R&D center in Nanjing. Such an accomplishment, in Irico's view, would be a boost in the overall firm's R&D capabilities. It is difficult to measure the financial impact of being part of the R&D center. However, this could affect Irico's sales positively in the region of hundreds of millions per year (through cost savings, improvements in production, new product development, etc.).

Regarding the eight-generation joint venture that Sharp aimed to establish in China, Irico decided that it had no conditions to enter in this operation.

1-1



### **CEC-Panda: Confidential Instructions**

You play the role of Li Kechey, CEC-Panda's CEO, in the negotiation with Sharp and Irico. This negotiation might enable the firm to be able to manufacture LCD TV panels. Your role includes negotiating possible partnerships in China. In order to do this in this negotiation, you are reviewing the negotiation's key issues with the firm's National Market Manager.

**CEC-Panda's current situation** - CEC-Panda faces this negotiation with the objective of becoming the third Chinese company able to produce LCD TV panels in China. Knowing the trend of foreign firms investing in China, you are aware that the sooner you are able to do this, the better.

**CEC-Panda's interests in the negotiation** - CEC-Panda is interested in purchasing Sharp's sixth-generation production equipment at Kameyama Number One plant. It plans to utilize this material in a plant that would be built in Nanjing. CEC-Panda's engineering team made a first approach to the market of this technology and estimated its market value at around €625M. They also had some first-explorative conversations with a Taiwanese firm, which demonstrated the will to sell sixth-generation equipment at a value around €600M. The engineering team was very clear about the request that any acquisition of such technology should be coupled with assistance from a firm with expertise. Irico team has no experience with sixth-generation technology, and to successfully install the plant and run it during the initial phase would require know-how. The costs associated with the construction of the plant are estimated to be €1 billion. The plant CEC-Panda plans to build could produce 80,000 LCD panels and 80,000 modules per month. CEC-Panda expects to target a 320€ price per LCD panel and €160 per module. CEC-Panda estimates the sixth-generation plant to have a life cycle of 8 years.

Regarding the eight-generation joint venture that Sharp aimed to establish in China, CEC-Panda wishes to be part of this. The CEC-Panda engineering team studied the possibility of building an eight-generation plant in China with a monthly production of 60.000 LCD panels and modules. They came up with an estimated budget of €2.4 billion and expect to target a €780 price per LCD panel. The equity in the joint venture will correspond to each firm's initial investment and the factory's output allocation. The higher the equity CEC-Panda could get in the joint venture, the higher the expected impact of CEC-Panda on the market.

Moreover, CEC-Panda would be interested in helping Sharp in building and operating the LCD R&D center in Nanjing. Such an accomplishment would be a boost to the overall firm's R&D capabilities. It is difficult to measure the financial impact of being part of the R&D center. However, this could positively affect CEC-Panda's sales in the region of hundreds of million per year (through cost savings, improvements in production, new product development, etc.).

## **4 Literature Review**

In this section, we present a brief literature review of two topics that are particularly important in the analysis of the case study presented in this Work Project. First, we focus on the formation and stability of coalitions in a negotiation context. Second, we discuss how to deal with a negotiation process when the objective is to maximize the value created by the parties involved.

The literature on coalitions in a negotiation context focuses on two main topics: the stability of coalitions and the sequence by which parties approach each other. The fundamental difference between a negotiation with two parties and one with multiple parties is that in the latter case any subset of players may decide to collude against the other players. Thus, several coalition structures are possible and, as a result, coalitions are often unstable. The stability of coalitions is a crucial topic, because if coalitions are unstable value creation becomes problematic.

A fundamental insight into the economic literature on cooperation is that fear of retaliation is an important mechanism that sustains collusion (e.g. Stigler, 1964). Obviously, this mechanism becomes more effective when behaviour, in particular deviations from coalition agreements, are observable and parties have the ability to retaliate. Thus, observability of behaviour and the ability to sanction are crucial determinants of the stability of coalitions. This is a well-known result in the economics literature on tacit collusion (for an overview see, for example, Tirole, 1989). By moving from one-shot games to repeated interactions, retaliation becomes possible. As a result, coalitions are more stable when parties' behaviour is observable and they have the ability to sanction.

The stability of coalitions is determined, not only by the observability of behaviours, but also by the observability of payoffs. Interestingly, while transparency about behaviours increases the stability of coalitions, transparency about payoffs often has the opposite impact. Lax and Sebenius (1986, p. 224) refer to the work of Ernst Haas that introduced the concept of Fragmented Linkage (Haas, 1980). It is explained that uncertainty concerning outcomes is part of the glue that holds the coalition together.

For better comprehension on how observability of payoffs affects the stability of coalitions, one should consider the strong emotions, such as greed, envy or suspicion, which originate from the knowledge of payoffs. The following examples, regarding the coalition members' (CM) perception of the coalition, allow a better illustration. (1) If one CM has information about his payoffs under alternative coalition structures, he would likely aim for the highest possible payoff; (2) if one CM has information about the other members' payoffs, he is likely to compare it with his own payoff; (3) if one CM has information about the others' payoffs under alternative coalition structures, he is likely to fear the others' commitment with the current coalition. It should be concluded that coalitions are more stable with uncertainty of CM payoffs.

The stability of coalitions is also influenced by the number of issues being negotiated. Lax and Sebenius (1986, p. 224) highlighted that by adding issues to the negotiation, the coalition may be strengthened. The negotiation process is then perceived to be constructive and open, and parties have an incentive to preserve solidarity. In single-issue negotiations, the negotiating process is limited to parties' efforts in claiming the greatest share of the pie. This is considered a zero-sum dynamic, i.e., for one party to get more, the other simultaneously gets less. Contrarily, in multiple-issues negotiations, parties

are doing as much as possible to be able to increase the pie. This is known as integrative bargaining. Integrative bargaining will be further developed when we address the value creation theme. However, it should be concluded that coalitions are more stable with multiple-issues on the table.

Another topic studied in the negotiation literature on coalitions is strategic sequencing (Lax and Sebenius, 1991; Watkins and Rosegrant, 1996). The concept refers to the choice of which parties are approached, in what order, openly or secretly, separately or together, to join a coalition. One's sequencing strategy might be either to begin with parties that are easy to recruit or parties that are harder to recruit. The knowledge about who has already decided to join a coalition and who has decided not to do it influences how parties value the potential return of entering it. Moreover, it affects parties' perception of the likelihood of the coalition's success.

Thus, the sequencing strategy should depend on its goal. If the entering of several easy joining parties is likely to encourage the harder ones to enter, then one would be better off in proceeding from easy-to-hard. The opposite reasoning applies. If the support of one hard joining party is likely to encourage several easy parties, then one would be better off by proceeding from hard-to-easy. Still, sequencing can matter only when its effects are costly or impossible to reverse (Zeckhauser, Keeney and Sebenius, 1996, p. 345).

Coalitions may be destabilized by the feeling of unfairness, i.e., when at least one of the parties assesses the value distribution as unfair. There are several methods to determine the fair outcome in a negotiation, as the Shapley Value or the Core Solution proposed by Raiffa (Raiffa, 2002, pp. 441-446). However, it would always be difficult and subjective to assert which method leads to the fair solution. Even an independent arbitrator would find it

difficult to point out the right method to utilize, since the problem itself is highly subjective. This is even amplified in a negotiation because parties are biased in relation to what they assume to be a fair outcome. Being aware of the problems concerning the feeling of unfairness in a negotiation, parties should deviate the discussion as much as possible from the fair solution. Rather, parties should focus on each party's interests and seek joint gains.

This leads to the other theme that the negotiation case allows to analyse, the value creation process in a negotiation. Raiffa (2002) noticed that by converting a single-issue problem to a multiple-issue one, parties are entering into what is called integrative bargaining. In decomposing large problems, analysis should be done by decomposing the problem and working simultaneously on the separate parts, since this makes claiming less appealing. This is not a zero-sum dynamic, but rather an opportunity to establish cooperation, seeking joint gains and an increase in the total amount of the pie (value creation) they later can split (value claiming).

For the purpose of the success of value creation, each party should understand the interests at stake for all sides, going further on apparently incompatible bargaining positions. Parties should also explore the differences among them, thinking creatively about how parties could maximize the size of the total pie (Lax and Sebenius, 2006). To be able to do it, parties should have a three-step procedure: brainstorm internally; arrange a non-binding gathering between all parties; and re-conduct the internal brainstorming, taking into account the information learned from the gathering.

The first phase corresponds to each side's internal brainstorming. Each party should aim to gather as much information as possible about his and other parties' situations,

assessing options to introduce in the negotiation that would satisfy the other side with no great cost for himself.

Secondly, a non-binding gathering between all parties should be encouraged. In it, parties should brainstorm without commitment about issues to be solved, sharing interests and exploring options. Within this brainstorming the principle of reciprocal inclusivity should be encouraged, that is, including not only the issues upon which both agree, but also those that each party wishes to include. Thus, all parties are given incentives to create a larger pie. With regard to the issues to be resolved, parties should be able to find both non-controversial and controversial issues.

Non-controversial issues refer to issues in the negotiation where parties have the same expectancies and benefits. Therefore, parties should be able to take advantage of them. However, in some cases one party might end up not identifying this similarity between his and the other side's benefits. In this situation, the issue represents a hidden-congruence issue. Hidden-congruence issues might have a crucial role in negotiations, since parties may reveal too much information.

The controversial issues are those where parties have different expectations. Since differences are what allow parties to negotiate, value creation might be accomplished by exploring those issues. This can be done if parties create agendas with multiple issues and consider them simultaneously. The main goal should be to identify efficient tradeoffs. In order to do so, parties should quantify their possible gains and costs for each specific issue, as well as potential tradeoffs. In this process, parties should try to learn about other parties' preferences.

Differences are the ultimate factor that permit value creation in a negotiation. The

ability to identify and explore these issues is the basis of the third phase of the process. Parties should rethink internally about each party's situation and possible tradeoffs for the negotiation process.

## 5 Application of the Literature Review to the Negotiation Case

Taking into account the literature review, we will now study how different parties should negotiate the negotiation case proposed. In order to better analyse this, let us first look at each party situation before the negotiation. This exercise should be conducted by each side prior to the negotiation process, accessing their Reservation Price (RP) and Best Alternative to a Negotiated Agreement (BATNA).<sup>4</sup>

**Sharp Corporation** - Sharp enters this negotiation aiming to overcome its financial results that led the company to an unknown situation (financial loss and its implications). While doing so, imitation risks must be taken into account. On the other hand, the Chinese companies would always require, in any potential deal, a leading firm's expertise and technology. Regarding the items to negotiate, Sharp has an RP of €985M (million) for the sixth-generation equipment. But it expects to have bargaining power on the assistance fee, due to its unique experience and know-how. Moreover, there is the possibility of improving the conditions to supply Sharp's assembling plant in Nanjing. Regarding the eight-generation joint venture (JV), this is only possible to achieve with CEC-Panda. Still, Sharp does not have such information in advance. The main issue to negotiate will be the equity for each company, where Sharp clearly wishes to take a minority stake. Sharp's BATNA is

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<sup>4</sup> RP is the minimum price the seller/ buyer is willing to sell/ buy. If the RP of the buyer is larger than the seller's one, the range between those two values is considered the ZOPA, the range of possible solutions for the final contract.

the €500M offer for the equipment.

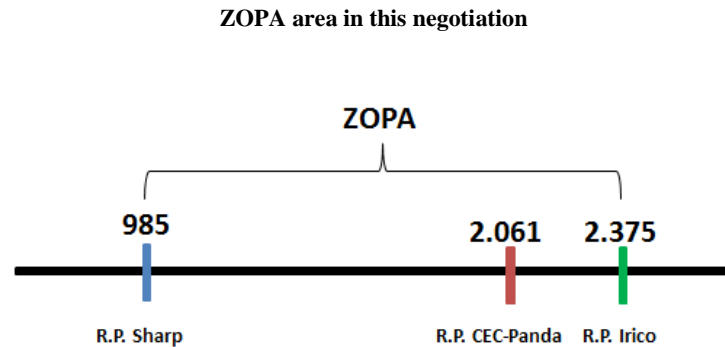
**Irico** – Irico enters the negotiation suspicious of its weaker status, as it is only willing to negotiate two of Sharp's interests. It is possible to calculate Irico's RP. Assuming total output allocation, its sales expectations are around €500M per year, and €4 billion for the plant's eight-year life expectancy. If we discount the amount invested (acquisition of equipment valued at €625M and the construction of €1 billion) then its RP is €2.375 billion. Since Irico is not aware of Sharp's price for its assistance, such an amount should be discovered in the negotiation and deducted from the RP. Moreover, Irico is interested in entering Sharp's LCD R&D center stake. Irico's BATNA is the Taiwanese firm's equipment or waiting to negotiate with other foreign firms.

**CEC-Panda** – the company will negotiate with the purpose of leveraging its presence in the national market. CEC-Panda has a sixth-generation RP of €2,061M, by subtracting €1,625M of total costs to €3,686M (total sales for the 8 years). Since CEC-Panda is not aware of Sharp's price for its assistance, such amount should be discovered in the negotiation and deducted from the RP. For the eight-generation JV, the main issue to negotiate will be the equity for each company, where CEC-Panda wants to take a majority stake. CEC-Panda is also interested in entering Sharp's LCD R&D center stake. Its BATNA is exactly the same as that of Irico.

Being aware of all parties' situations, we will now tackle the different operations of the negotiation. There are several manners to approach a negotiation, but focusing on single-issue negotiations is often the parties' choice. Several times, parties might be tempted to focus the discussion on price. Starting with the sixth-generation equipment sale, we first describe the bargaining conditions of a single-issue negotiation in the following



graph:



One can assume that Sharp would try to raise its expectations, arguing for the importance of its expertise, and thus requesting more for the assistance fee. It can also be pointed out that Irico and CEC-Panda will argue for lower values, mentioning their alternatives, for example. In both cases the existence of a ZOPA in this negotiation is still clear. All parties would try their best to justify why the final agreement value should be around its RP. In a single-issue negotiation (price) case, Irico would find it very difficult to fail to close the deal, since its RP is higher than that of CEC-Panda.

As explained in the literature review, parties should not address the negotiation basing it on a single-issue. Thus, it becomes relevant to analyse how this negotiation can move from a single-issue to a multiple-issues one. Remember, only after transforming the negotiation into a multiple-issues one, by adding issues to the table, will parties be able to take advantage of their differences and win-win situations may be found. This contributes, as it was previously mentioned, not only to create value in a negotiation but also to accomplish more stable coalitions.

All parties have enough information to assess their own payoffs. For example, Irico can calculate its sales effect by negotiating price discount for selling LCD panels to Sharp.

Another example might be CEC-Panda assessing tradeoffs between increasing Sharp's price discount on sixth-generation LCD panels and demanding a higher stake at the eight-generation JV. By doing so, CEC-Panda is now able to offer something else to Sharp, which could ultimately cover the gap in the difference for Irico's sixth-generation best offer.

By brainstorming together without commitment, parties could discover the presence of both non-controversial issues (NCI) and controversial issues (CI). Sharp's acquisition of sixth-generation plant panels and Sharp's assistance for the plant's construction are NCI. Sharp had already decided to close the sixth-generation plant and transfer its equipment to China, since Sharp considered it already obsolete. With such a move, Sharp was able to gain access to cheaper LCD panels in the Chinese market. The LCD R&D center and the eight-generation JV should be seen as CI. In these both cases, Sharp had concerns regarding imitation risks. Thus, the firm had to balance, in a negotiation, the tradeoff between having access to cheaper LCD components and the imitation risks by Chinese companies.

The NCI should allow parties to discuss and reach a consensus for final values. There is space for bargaining sixth-generation plant's output, since the price Sharp currently pays for imported panels (€400) is higher than the expected prices of Irico (€350) and CEC-Panda (€320). Regarding Sharp's assistance, it is clear all parties would benefit from it.

The CI should encourage parties to create value, considering them simultaneously. For the eight-generation JV equity, Sharp aims to become a minority stakeholder, which is exactly the opposite of CEC-Panda's interest. Parties should be able to assess each side's benefits and costs with the stake they end up with. Regarding the R&D center, Sharp

intends to build and operate it alone, with all the advantages that this strategy brings. Still, Irico and CEC-Panda might also benefit from the center, if they are able to successfully negotiate a deal with Sharp. The advances that Sharp would get in the R&D center could pass in many ways to the Chinese firm(s). An example of this could be a more efficient production of LCD panels that would then be implemented in its joint plants. However, with the instructions of operating the center alone, Sharp is very likely to refuse any third-party investment. Even then, Irico and CEC-Panda would likely benefit indirectly, since Sharp aims to get technology advance and install it at its joint plants.

Having understood the existence and consequences of NCI and CI for the negotiation, the further discussion should be based on the following reasoning: does it make sense for Irico to encourage a multiple-issues negotiation? Does Irico increase its chances of acquiring the sixth-generation equipment by discussing simultaneously all issues? Does Irico wish to establish a three-player coalition? The answer to these questions is likely to be negative. Irico, after understanding each side's preferences for the negotiation, should focus only on the sixth-generation discussion. Its inability to pursue the eight-generation JV discussion is the main reason. It then becomes relevant to analyse how coalitions can be formed in this negotiation. Two different coalition formations are possible: a set of two-party coalitions, with Irico and Sharp for the sixth-generation negotiation and Sharp and CEC-Panda for the eight-generation JV; and a two-party coalition with Sharp and CEC-Panda for both issues.

Let's analyse the first case. Irico's strategy might pass by meeting first with CEC-Panda to brainstorm. It would try to understand CEC-Panda's situation and even its unawareness about transportation costs of the Taiwanese company's sixth-generation

equipment. Moreover, Irico could also pretend to be interested in the eight-generation JV. With all this information, Irico might negotiate a strategy for both firms to negotiate with Sharp. Such a strategy could consist of Irico negotiating the acquisition of the sixth-generation equipment with Sharp, while CEC-Panda would only negotiate the eight-generation JV. Irico's argument for convincing CEC-Panda could be that the latter would then enter into the eight-generation JV negotiation with stronger financial capabilities. Sharp's strategy could then be reduced to negotiate with Irico for the first issue and close the second one with CEC-Panda. One could point a variation of this coalition, where Irico would fail to convince CEC-Panda to get a common negotiation strategy. In such a case, all parties could jointly negotiate the sixth-generation and establish a three-party coalition for it. The eight-generation JV would not include, again, Irico.

Regarding this first coalition formation's possibility, it should be highlighted that it would likely fail to produce a stable coalition. First, by colluding with more than one firm, Sharp makes it more difficult to detect possible deviations and thus, the ability to retaliate decreases; the number of issues on the table is not being maximized; and it is more likely that each side would seek different coalition alternatives. Moreover, if in the negotiation process Sharp tried to approach different parties sequentially, its learnings would already be biased by the arrangement between Irico and CEC-Panda. Thus, Sharp would have difficulty in viewing the process as fair. Finally, Sharp increases the risk of competitors acquiring its technological property, since it becomes harder to measure the know-how that Sharp passes.

Let's turn our attention now to the second formation possibility, where only Sharp and CEC-Panda would collude. This collusion stability would depend on the firms' ability

to focus on multiple-issues. By doing so, the process will be seen as more constructive and parties would invest in creating a relationship. Moreover, each side might be able to better understand the other's expectations and ultimately that CEC-Panda is the only firm able to negotiate both issues with Sharp. If this is the case, both firms could forecast a stable coalition. By colluding with only one firm, it might be easier for Sharp to detect possible deviations and thus, the ability to retaliate increases; the number of issues on the table is being increased to the maximum possible; and it is less likely that each side would seek different coalition possibilities. Moreover, it would still be possible to incur strategic sequencing, in order to learn with open communications with each party. The process would likely be considered fair, and the chances of getting a consensus on a fair outcome are also higher. Finally, Sharp decreases the risk of competitors acquiring its technological property, since it is easier to measure the know-how that Sharp provides.

## **6 The negotiation's output: what really happened**

In this section, we will present the real outcome of the negotiation between Sharp and CEC-Panda. The negotiations for the entrance of Sharp in the Chinese market were successful. Sharp was able to partner with CEC-Panda, in the conditions that are described below.

Still in 2009, Sharp has agreed to close its Kameyama Number 1 plant and sell the sixth-generation LCD production equipment to Nanjing CEC-PANDA LCD Technology Co., Ltd<sup>5</sup>. CEC-Panda would utilize the equipment in a plant yet to be built in Nanjing. Sharp would sell its LCD production technology and know-how, assisting the Chinese

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<sup>5</sup> An LCD production company jointly established by Nanjing-city and CEC-Panda.

company in designing the plant and providing technological support. Sharp had a TV assembly plant in Nanjing that could be supplied with these panels. CEC-Panda's plant in Nanjing began operation in May 2011. CEC-Panda total investment with this operation was 元13.799 billion (around €1,932 billion).<sup>6</sup> Irico was always an alternative to Sharp selling this equipment.

The agreement between the two companies contemplated a memorandum of intention to establish a joint venture to produce eight-generation LCD TV panels. This was to “meet the ever-growing demand for LCD panels in the Chinese market.”<sup>7</sup> Sharp's role in this joint venture was critical for CEC-Panda due to its technical expertise. Moreover, the Chinese government, owner of CEC, established that the eight-generation investment would only occur with a source of technology. Sharp could be that source. CEC-Panda initially considered investing in a tenth-generation plant, but the risks associated with such young technology led the company to reset the goal for an eight-generation plant. In 2013, the Nanjing CEC-Panda LCD Technology was established, with 元17.5 billion yen in capital (approximately €2,450 billion), a joint venture between CEC-Panda (92%) and Sharp (8%).

The joint venture would build and operate an 8.5th-generation plant in Nanjing. It was established that Sharp had priority over the plant's output allocation. The plant would have a monthly capacity of 60,000 mother glass substrates for LCD, TVs, LCD monitors and tablets, and was scheduled to initiate production in June 2015. Moreover, Sharp would provide high definition TFT-LCD panels and module technology to CEC. It is relevant to

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<sup>6</sup> 元 Is the symbol for the Chinese currency Renminbi and its currency code is CNY. The currency rate utilized was 0.14 (14th May 2015).

<sup>7</sup> Sharp's official press release.

mention that CEC became the largest shareholder of TPV, in 2010. TPV was one of the world's major LCD monitor and LCD TV contract manufacturers. When Sharp and CEC-Panda established their eight-generation joint venture, TPV was already the major customer of CEC-Panda's sixth-generation plant. Thus, there was the expectation that TPV would guarantee a significant percentage of the new 8.5<sup>th</sup>-generation plant's monthly output.

As part of Sharp's strategy to manufacture in China, the company built an LCD R&D center in Nanjing, in 2010, to research and develop from LCD panels to LCD TVs. The firm seek to make LCD products geared for the Chinese market. Sharp accepted no participation of other companies in the construction and exploring activities of the R&D center. This brought many advantages, mostly maintaining technology property. By building the R&D Center, Sharp was able to establish a vertical integration production in China, with R&D, production of LCD TV panels and even assembly of LCD TVs. In the third quarter of 2010, China became the largest single-country market of LCD TVs.

The joint venture with CEC-Panda confirmed Sharp's new strategy of partnering with other companies. In fact, since the establishment of the new strategy, Sharp shortly initiated several operations with other firms: in March 2012, Sharp sold half of its stake (92.96%) at Sakai plant to Foxconn and the latter was also planned to acquire 10% of Sharp's stake; in March 2013, Samsung acquired 3% of Sharp's stake; in June 2013 Qualcomm acquired 3.53% of Sharp's stake. And these are only some examples.

## **7 Conclusion**

This case study aims to be taught in courses of negotiation in master's and executive programs. It studies the coalition's theme from a negotiation analysis perspective. The purpose was to link this theme with the value creation process in a negotiation.

For the negotiation case, two different negotiation strategies were assumed as plausible and therefore introduced. Irico's best strategy reveals itself to be an inefficient one, as joint gains are not being explored, and thus the value creation process cannot take place. Contrarily, CEC-Panda and Sharp's best strategy consists of opening the game. This permits the seeking of joint gains and the maximizing of the possibilities of value creation in order to claim it. Such a strategy would likely lead to a fairer coalition formation and to its stability. It is then concluded that by maximizing value creation, negotiating parties increase the likelihood of getting stable coalitions. Thus, parties negotiating collusions should avoid single-issues negotiations. Moreover, parties should focus on each party's interests; explore and take advantage of differences; and seek joint gains.

By presenting the negotiation's real outcome, we get the information that Sharp chose CEC-Panda as its coalition partner for all the issues negotiated. The secrecy of the real negotiation's details do not allow a secure conclusion that such a decision was based on the factors discussed in this report. Still, key learning from Sharp's decision should be pointed out: the Japanese firm enlarged the negotiation's agenda for the coalition's formation. Moreover, it was able to guarantee a coalition that has been sustained until today.



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